Y1 GNSS RECEIVER

LAND SURVEYING SOLUTION

Versatile For Any of Your Needs
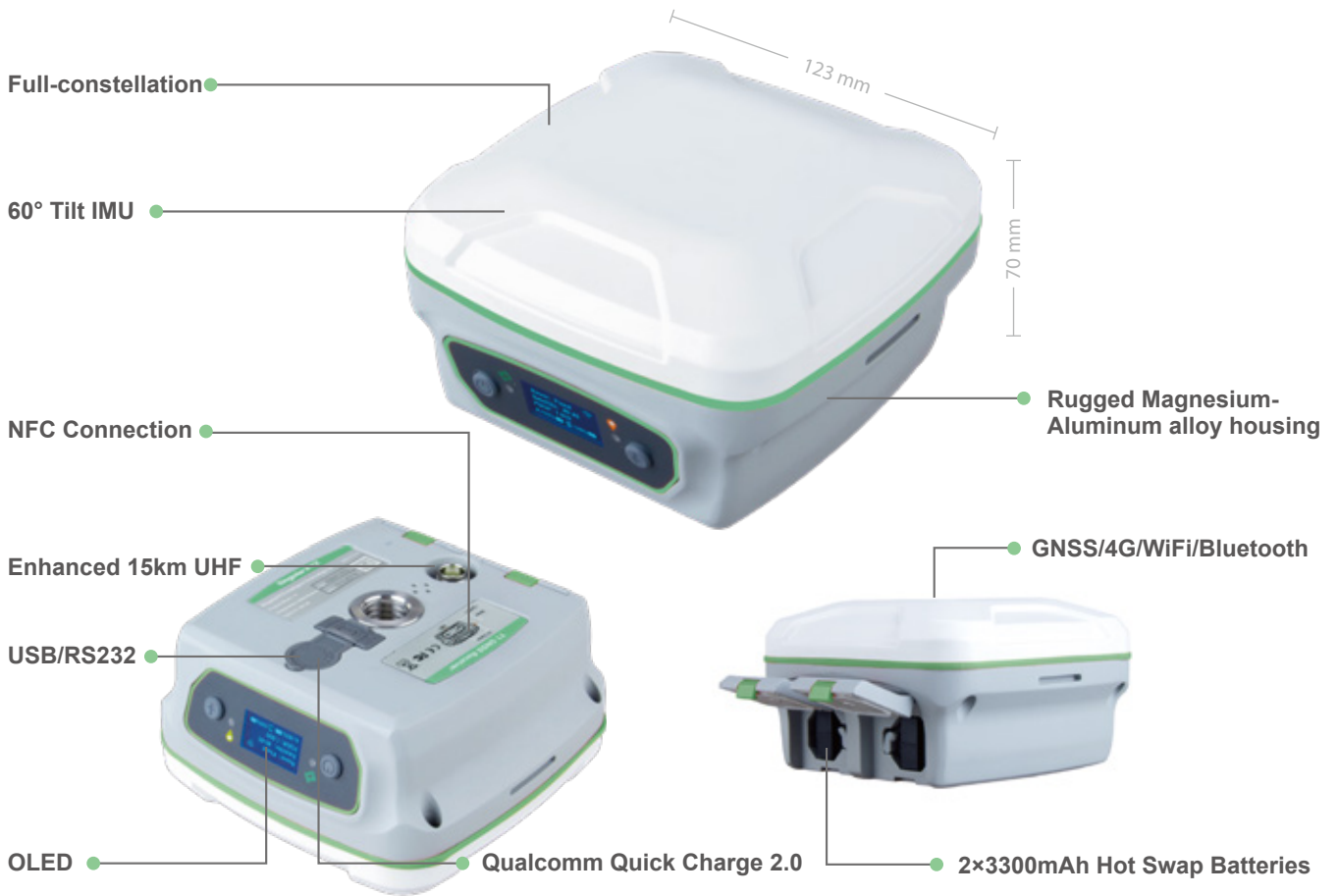Accurate Anytime & Anywhere

SingularXYZ ®

Y1 GNSS Receiver Land Surveying Solution is a complete solution including the GNSS receiver, data collector and field software. Equipped with all the common functionality in the industry, this solution can satisfy almost any of your requirements, providing you with a cost-effective choice with first-class performance.

Full-constellation

60° Tilt IMU

123 mm

70 mm

Rugged Magnesium-Aluminum alloy housing

NFC Connection

Enhanced 15km UHF

USB/RS232

GNSS/4G/WiFi/Bluetooth

OLED

Qualcomm Quick Charge 2.0

2×3300mAh Hot Swap Batteries

FULL-CONSTELLATION
1598 channels for synchronously track GPS, GLONASS, BeiDou, Galileo, QZSS, Navic and SBAS, delivering centimeter accuracy.

ENHANCED UHF
The enhanced UHF can achieve up to 15km working range with 2W power, reducing your burden without the need of external radio.

FLEXIBLE COMMUNICATION
Integrated with 4G/UHF/WiFi/Bluetooth/USB/serial port, you can flexibly select the way you need for communication.

USER-FRIENDLY WEB UI
Through WiFi connection, users can easily configure work modes, download data, upgrade firmware and check device status via web UI.

60° TILT IMU
The built-in IMU module supports up to 60° tilt surveying while keeping the accuracy within 2.5cm.

NFC CONNECTION
Equipped with an NFC chip, users can easily connect the Y1 receiver and the data collector with just one touch, without searching for pairing.

OLED DISPLAY
Through the OLED display, functional buttons and indicators, you can directly perform status checking and configuration of Y1.

6600MAH BATTERIES
Hot swap batteries with 6600mAh large capacity support more than 12hrs working time and less than 3hrs charging time.

COMPACT DESIGN
Compared with most GNSS receivers, Y1 shows small size and light weight for your convenience in the field.

RUGGED HOUSING
With IP67 waterproof & dustproof design and magnesium-aluminum alloy housing, Y1 is not afraid of harsh working environments.

DATA COLLECTOR

SC100 DATA COLLECTOR

Android — Powered by Android **8.1 OS**

IP67 — **IP67** & MIL-STD 810 G standard

4G ⚡ — **4G/WiFi/Bluetooth** communication

5inch — **5"** sunlight-readable touch screen

15h — **7000mAh** battery for 15h operating

TF — **4GB** RAM + **64GB** ROM + **Extend TF**

SOFTWARE

🤖 FIELD SURVEYING SOFTWARE

○ Compatible with most brands of NMEA devices
○ Available Datums of most countries and regions
○ Full work modes – PDA CORS, internal/external radio, GSM and etc.
○ Various survey methods – topo survey, road stake, surface stake, CAD stake and etc.
○ Support tilt initialization and measurement
○ Abundant formats supported – TXT, DXF, CSV, HTML, KML, SHP and etc.

Basic Version
SingularSurv

Professional Version
SingularPad

*The basic software SingularSurv is provided with the Y1 receiver, while the professional software SingularPad is optional.

⊞ GNSS POST-PROCESSING SOFTWARE

○ Support both static and kinematic post-processing
○ Support GPS/GLONASS/BeiDou/Galileo GNSS raw data processing
○ Support raw data formats like binary, RINEX, RTCM32 and etc.
○ Support multiple baseline processing and adjustment methods
○ Support various output formats, including HTML, TXT, KML and etc.

SIGNAL TRACKING

Channels	1598
GPS	L1C/A, L2P, L2C, L5, L1C
BDS	B1I, B2I, B3I, B1C, B2a, B2b
GLONASS	L1, L2, L3
Galileo	E1, E5a, E5b, E6, E5 AltBoc
QZSS	L1C, L2, L5, L1C/A
Navic	L5
SBAS	WAAS, EGNOS, SDCM, BDSBAS, GAGAN

ACCURACY

RTK reliability	> 99.99%
RTK initialization	< 10s
Hot start	< 15s
Cold start	< 50s
Re-acquisition time	< 1s
Static post-processing	± 2.5mm+0.5ppm Horizontally ± 5mm+0.5ppm Vertically
RTK	± 8mm+1ppm Horizontally ± 15mm+1ppm Vertically
RTD	± 0.5 m Horizontally ± 1.0m Vertically
SBAS	< 1.0 m 3D RMS
Tilt surveying	< 2.5cm, within 60° tilt

DATA FORMAT

Data recording formats	RINEX 2.X, 3.X, binary data
Correction data formats	RTCM 2.x, 3.x, CMR, CMR+[1]
Data output formats	NMEA-0183 messages, binary data
Data output rate	1Hz, 2Hz, 5Hz, 10Hz, 20Hz
Supported protocols	VRS, FKP, MAC, Ntrip

COMMUNICATION

BT	BT4.0
Wi-Fi	IEEE 802.11 a/b/g/n 2.4G 5G, support configuration & data download via web UI
4G	FDD-LTE B1/B3/B5/B7/B8 TDD-LTE B38/B39/B40/B41 TDSCDMA B34/B39 WCDMA B1/B2/B5/B8 GSM B2/B3/B5/B8 CDMA1x/CDMA2000 BC0/BC1
UHF modem[2]	- Frequency range: 410 – 470Mhz - Channel Spacing: 250 kHz - Transmit power: 0.5W/1W/2W selectable - Working range: 5km – 15km[3]
Interface	1 7-pin lemo port for RS232 transmission and power supply 1 SIM card slot for 4G 1 TNC connector for UHF antenna

ELECTRICAL

Power	6-28V DC
Battery	6600mAh, 3.6V, more than 12 hours working time
Power consumption	< 2.85 W[4]

PHYSICAL

Size	12.3 × 12.3 × 7.0cm
Weight	834 g, with batteries inside
Memory	8 GB
Display	0.93" OLED display
Button	2 buttons for power/enter and function
Indicator	2 LEDs indicating satellite tracking and correction data
Housing	Magnesium-aluminum alloy
Speaker	For voice broadcast of real-time status

ENVIRONMENTAL

Working temperature	-30℃ ~ +65℃
Storage temperature	-40℃ ~ +85℃
Waterproof & dustproof	IP67
Shock and Vibration	Designed to survive a 2m drop onto concrete
Humidity	100% no condensation

Note:

1. The CMR and CMR+ formats are only for GPS.

2. The enhanced UHF modem is not compatible with the normal UHF modem on the market. For different user needs, SingularXYZ also provides normal UHF as an option compatible with UHF of other brands. Please clarify your requirements when placing the order.

3. The maximum working range of the enhanced UHF modem is 15km in ideal environments.

4. The power consumption of Y1 varies with the different work modes.

All specifications are subject to change without notice.